

C3 33. (New) The composition of claim 19, wherein the sum of the SiO₂, ZrO₂, and Al₂O₃ contents is from 71.5% to 75% by weight.

REMARKS

Applicants appreciate the courtesies extended by Examiner David R. Sample during an interview on May 14, 2001 with Applicants' representatives, Paul E. Dietze and David M. Weisberg. The comments appearing herein are substantially in accord with those presented and discussed during the interview, except as noted herein.

Claims 19-20 and 23-32, as amended, as well as new claim 33, are currently pending in the above-captioned application for the Examiner's review and consideration. Claims 29-30 were amended to remove the recited strain point ranges, which became duplicative upon entry of a prior amendment to independent claim 19. Claim 32 was amended to recite an alternative list of articles by deleting the word "and," as suggested by the Examiner to overcome the claim objection on page 2 of the Office Action. New claim 33 is dependent on claim 19 and recites a range for the sum of the silicon oxide, aluminum oxide, and zirconium oxide contents. This upper end (75%) of this range is supported by the instant specification at page 12, lines 5-6, while the lower end (71.5%) of this range is supported by Composition 5 of the Annex Table on page 19 of the instant specification. As no new matter has been added by these claim amendments, Applicants respectfully request their entry into the record of the above-captioned application at this time.

Claims 29-30 were rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for having different ranges than the independent claim from which they depend, on page 2 of the Office Action.

Claims 29-30 have been amended to remove such strain point ranges, as the strain point temperature range was properly included into independent claim 19 by Applicants' previous Amendment, filed October 2, 2000. As a result, Applicants respectfully submit that the rejection has been rendered moot and respectfully request that the indefiniteness rejection be reconsidered and withdrawn.

Claims 19-20 and 23-32 were rejected under 35 U.S.C. §102(e) as being anticipated by U.S. Patent Nos. 6,063,718 to El Khiati *et al.* ("El Khiati") and 5,990,023 to

Siedel *et al.* ("Seidel"), on pages 3-7 of the Office Action. Applicants respectfully traverse the rejections.

Applicants respectfully submit that neither El Khiati nor Siedel constitute prior art under 35 U.S.C. § 102(e). El Khiati has a filing date of January 16, 1998, while Siedel has a filing date of March 11, 1998. In contrast, the present application claims priority under 35 U.S.C. § 119 to German Application No. 197 10 289.1, filed March 13, 1997, French Application No. 97/05364, filed April 30, 1997, and French Application No. 97/07521, filed June 17, 1997, all of which have priority dates preceding the U.S. filing dates of El Khiati and Seidel. Since the filing dates of both El Khiati and Siedel are not earlier than the effective filing date of the present application, neither reference can constitute prior art under 35 U.S.C. § 102(e). Applicants respectfully direct the Examiner's attention to M.P.E.P. § 715, which recites "[w]here the effective filing date of applicant's or patent owners parent application or an International Convention proved filing date is prior to the effective date of the reference, an affidavit or declaration under 37 C.F.R. 1.131 is unnecessary because the *reference is not used.*" (emphasis added).

Although Applicants have previously submitted certified copies of the three priority documents mentioned above, the most recent Office Action still failed to recognize that references filed after the effective filing date, but before the U.S. filing date, of the instant application do not qualify as 35 U.S.C. § 102(e) prior art references. Applicants enclose herewith certified translations of these three priority documents, as requested by the Examiner, to overcome the rejection. For the foregoing reasons, Applicants respectfully submit that neither El Khiati nor Siedel constitute prior art under 35 U.S.C. § 102(e) and respectfully request that the rejection be reconsidered and withdrawn.

Claims 19-20 and 23-32 were rejected under 35 U.S.C. § 103(a) as being unpatentable over WO 96/11887 to Koch *et al.* ("Koch"). The Office Action indicated that Koch discloses a glass that has overlapping ranges of components with the instantly claimed glass composition, which thus establish *prima facie* obviousness. Applicants respectfully traverse this rejection.

Koch discloses a heat resistant glass (*See, e.g.,* Koch, column 1, lines 5-7). The glass composition comprises SiO₂ (45-68%), Al₂O₃ (0-20%), ZrO₂ (0-20%), B₂O₃, (0-10%), Na₂O (2-12%), K₂O (3.5-9%), CaO (1-13%) and MgO (0-8%) (*See, e.g.,* Koch,

column 1, line 65 to column 2, line 10). Koch, however does not disclose the glass composition or the parameters recited in independent claim 19, as amended.

For example, Koch does not disclose or suggest a glass composition having between 55 and 75% SiO₂ and a strain point temperature of greater than 570°C, as recited in independent claim 19. Koch merely discloses that his glass composition can have a strain point of equal to or greater than approximately 530°C (*See, e.g.*, Koch, column 2, lines 20-21). There is, however, no disclosure of a strain point of greater than 570°C and a SiO₂ content of greater than 55%. In the examples disclosed in Koch it is clear that his compositions only have a strain energy greater than 570°C when the amount of SiO₂ is less than 55% (*See, e.g.*, Koch, column 7, Tables 1 and 2).

Applicants note that when the amount of SiO₂ is below 55% the resulting glass is insufficiently stable (*See, e.g.*, Specification, page 11, page 18-20). Applicants, however, have unexpectedly discovered that a glass composition having greater than 55% SiO₂ can also have a strain point of greater than 570°C. Koch is completely silent as to a glass composition having more than 55% SiO₂ and a strain point of greater than 570°C, as presently claimed. Indeed, his examples actually teach away from such a composition and clearly provide no reasonable expectation that such a composition could be successfully manufactured.

Furthermore, Applicants note that examples 3-4 of Koch have values for B₂O₃ that are outside of the range recited in independent claim 19, as amended. Similarly, Examples 5-8 of Koch all have values for Al₂O₃ outside of the range recited in independent claim 19, as amended; Examples 9-11 have values for ZrO₂ outside of the range recited in independent claim 19, as amended; and Examples 11 and 12 have a value for α outside of the range recited in independent claim 19. Thus, each of the compositions disclosed in the examples in Koch have a different composition or different properties than the claimed composition.

In the Interview Summary, the Examiner alleged that Example 9 of Koch is close to that of the instant claims and teaches a glass composition having 54.6% silicon oxide (which he rounded up to 55%), 3.5% calcium oxide (which he rounded up to 4%), 4.2% magnesium oxide (which he rounded down to 4%), and a strain point of 606°C. Applicants respectfully point out to the Examiner, however, that Example 9 of Koch also teaches incorporating 10 wt% zirconium oxide into its glass composition, which is at least 20%

higher than the upper end of the range recited in the instant claims (*i.e.*, 0 to 8 weight percent zirconium oxide).

In addition, Koch does not disclose or even remotely suggest any ranges for the specific thermal stress coefficient, ϕ , with respect to its glass compositions. Indeed, there is not even a teaching or suggestion in the disclosure of Koch of the importance of maintaining the ϕ coefficient between certain parameters, or any parameters for that matter, whereas the instant claims recite a specific range of values for the ϕ coefficient of between 0.5 and 0.85 N/(mm²•°C). Silica-soda-lime glasses with ϕ coefficients in these ranges are particularly advantageous for improved toughness applications and improved resistance to thermal stresses due to temperature differences (*See* the instant specification at page 4, lines 13-33 and at page 8, lines 1-39).

The Office Action, on page 8, acknowledges the failure of the Koch reference to disclose or suggest any aspect of the ϕ coefficient but improperly characterizes the ϕ coefficient as a material property that is set, based solely on the concentrations of each of the components of a given composition. The Examiner, however, alleged that, despite Koch's lack of teaching or suggestion, similar composition ranges would necessarily encompass similar values of the ϕ coefficient. First, Applicants note that, for the reasons discussed above, the compositions disclosed in Koch, including Example 9, are not similar to the claimed glass composition. Furthermore, Koch is completely silent as to the ϕ coefficient and provides no suggestion or teaching that a silica-soda-lime glass, as currently claimed, could be manufactured to have the claimed ϕ coefficient. The particular values of the ϕ coefficient, in combination with the other features of the instant claims, are not taught or even remotely suggested by Koch. As such, one of ordinary skill in the art would not have had a reasonable expectation of success in achieving the instantly claimed invention.

In fact, contrary to the suggestion in the Office Action, Applicants maintain that it is both possible and probable, especially in view of the distinct differences detailed above between the instantly claimed component ranges and those in all the examples from the Koch disclosure, that the Koch disclosure did not inherently teach the claimed ranges for the ϕ coefficient merely by its disclosure of large ranges of component contents for its glass compositions. Indeed, as suggested by the Examiner in the Interview Summary, Applicants have reproduced the glass according to Example 9 of Koch, *i.e.*, the glass the Examiner

alleges is most similar to the glass of the invention, in order to determine the value of its ϕ coefficient. Importantly, the ϕ value of the glass according to Example 9 of Koch is outside the claimed range of 0.5 and 0.85 N/(mm²•°C). As recited in the instant application, the ϕ coefficient is defined by the following relationship: $\phi = \alpha \cdot E / (1 - \mu)$. For the glass according to Example 9 of Koch, it was determined that $\alpha = 84 \cdot 10^{-7} \text{ }^{\circ}\text{C}^{-1}$; $E = 80.9 \cdot 10^3 \text{ N/mm}^2$; and $\mu = 0.76$. Thus, the ϕ coefficient for the glass according to Example 9 of Koch was calculated to be 0.89 N/(mm²•°C). This value of the ϕ coefficient lies *outside* the instantly claimed range of between 0.5 and 0.85 N/(mm²•°C). Applicants respectfully submit, therefore, that the disclosure of Koch cannot render obvious the instant claims.

Further, as discussed in the Interview Summary of May 14, 2001, Koch teaches compositions in which the sum of the silica, alumina, and zirconia contents is less than or equal to 70% by weight (*See, e.g.*, Koch at column 2, lines 11-12). On the contrary, new claim 33 recites compositions having a sum of the silica, alumina, and zirconia contents that is between 71.5% and 75% by weight. Thus, Koch *teaches away* from the glass composition recited in claim 33 by requiring the sum of these components to be below the range recited in new claim 33. As a result, the disclosure of Koch cannot render obvious the subject matter of instant claim 33. Thus, as stated by the Examiner in the Interview Summary, claim 33 should be allowed.

For any of the foregoing reasons, Applicants respectfully submit that Koch does not disclose or suggest the glass composition of the invention or the properties of the glass composition recited in the instant claims, as amended. Thus, Applicants respectfully request that the rejection under 35 U.S.C. §103(a) be reconsidered and withdrawn.

Claims 19-20 and 23-32 were rejected under the judicially created doctrine of obviousness-type double patenting over El Khiati and Seidel, on pages 10-13 of the Office Action. The Office Action indicated that either of these patents would also form the basis for an obviousness rejection under 35 U.S.C. § 103(a), if the inventions were not commonly owned at the time of the instant invention.

Applicants have enclosed herewith Terminal Disclaimers disclaiming the terminal part of any patent granted on the above-identified matter that extends beyond the expiration date of to both Siedel and El Khiati, As a result, Applicants respectfully submit that

the obviousness-type double patenting rejection has been overcome. Thus, Applicants respectfully request that the rejection be reconsidered and withdrawn.

Applicants respectfully submit that all claims are in condition for allowance, early notice of which would be greatly appreciated. Should the Examiner disagree, Applicants respectfully request that the Examiner call the undersigned attorney for Applicants to arrange for a telephonic or personal interview to discuss any remaining issues and expedite the allowance of this application.

A Petition for Extension of Time for three (3) additional months to June 18, 2001, with provision for the required fee is submitted concurrently herewith. No other fees are believed due for this submission, as the addition of one dependent claim does not cause the application to exceed twenty total claims. Should any other fees be required, however, please charge the required fees to Pennie & Edmonds LLP Deposit Account No. 16-1150.

Respectfully submitted,

Paul E. [Signature] (45,627)

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Enclosures

Appendix A

AMENDMENTS TO THE CLAIMS

The rewritten claims were revised as follows:

29. (Amended) The composition of claim 19, wherein ϕ is between 0.75 and 0.84, and having [a strain point of greater than 507°C and] an electrical resistivity such that $\log \rho_{(250^\circ)}$ is greater than 6.6.

30. (Amended) The composition of claim 29 wherein [the strain point is between 530 and 590°C and] the electrical resistivity is such that $\log \rho_{(250^\circ)}$ is greater than 8.

32. (Twice amended) The article of claim 31 in the form of a monolithic glazing panel, a plasma-screen substrate, [and] an electroluminescent-screen or a cold-cathode-screen substrate.

The following new claim was added:

33. (New) The composition of claim 19, wherein the sum of the SiO_2 , ZrO_2 , and Al_2O_3 contents is from 71.5% to 75% by weight.